Correlation between Sunspot cycles and planets Jupiter and Saturn.

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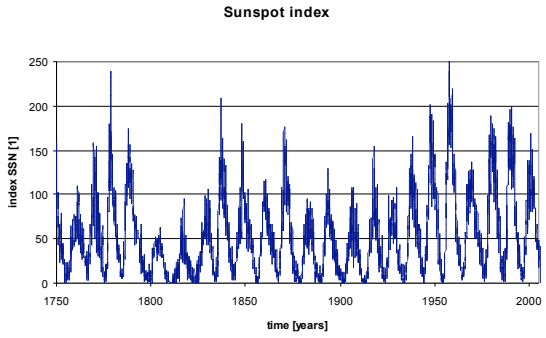
Abstract
We searched for a correlation between Sunspot cycles and Jupiter's orbital period using the Fast Fourier Transform (FFT) method.

Introduction
Solar activity has a variable period from 10 to 12 years.
Jupiter's orbital period is 11.87 years.
Question: Are there correlations between these two periods?

Calculation method
We used the Fourier analysis tool within Excel that uses the Fast Fourier Transform (FFT) method to transform data to solve problems in linear systems and analyzes periodic data. Our input data was from the Sun Spot Number (SSN) index[1, 2] (see Figure 1, input data).

Figure 1, input data



We did nine calculations with different period of years (1749-1919, 1760-1930, 1771-1941, 1781-1951, 1792-1962, 1803-1973, 1814-1984, 1824-1994, 1835-2005). The results are variable and are dependent on the period of years. The thick red line is the average of all the results (see Figure 2, output data).

Figure 2, output data

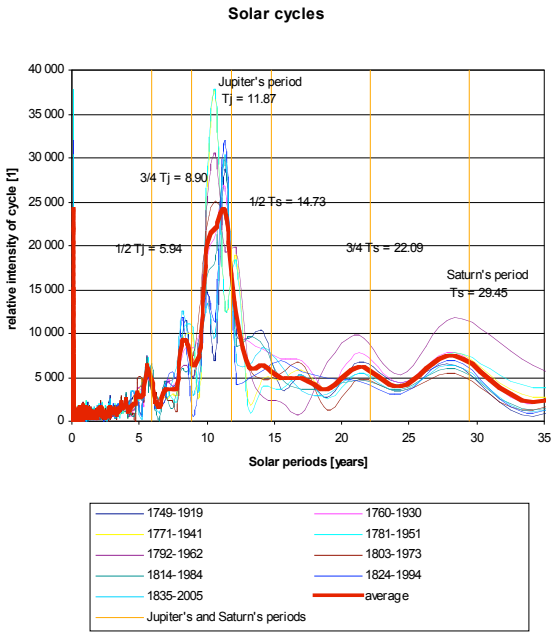
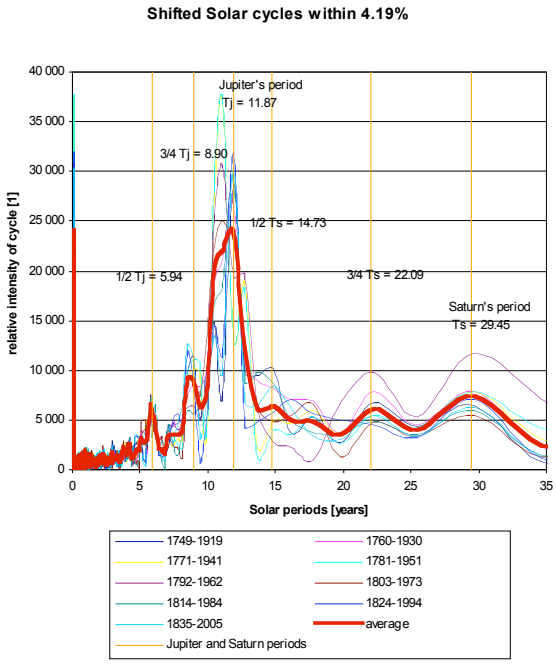


Figure 3, shifted data



(We will repeat this calculation using the daily sunspot number. Our prediction is that we will not have to shift the data in this case.)

Discussion

If we shift the results within 4.19%, we have good correlations with Jupiter's and Saturn's orbital periods. We also have good correlations with ½ and ¾ multiples of these periods. Figure 3 shows the results shifted within 4.19%.

What causes the correlations between these periods?

A) Gravity acceleration of the planets creates radial motion of plasma that becomes subject to the Coriolis force and creates a "Hurricane in the Solar plasma" = Sunspots.

B) Gravity acceleration of the planets creates Solar tides and deforms the Solar sphere. Deformed Solar sphere will intersect with the Solar spherical shape that is controlled by magnetic forces and perturb the magnetic layer by forming Sunspots.

C) Do you have an alternative idea?

D) Or the correlations are coincidental.

Prediction

We predict a correlation between the cycles of magnetic activity in binary stars and their orbital periods. We also predict a correlation between cycles of magnetic activity in stars and the orbital periods of their planets.

References

[1] Solar Physics, Publisher: Springer Netherlands, Issue: Volume 224, Numbers 1-2, Pages: 5-19, Article: What the Sunspot Record Tells Us About Space Climate, Authors: David H. Hathaway and Robert M. Wilson.

[2] http://science.nasa.gov/ssl/pad/solar/greenwch/spot_num.txt